PAT vs PF

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What Has been done?

Meeting with Frederic Ronga
    Probably a Leptonic SUSY meeting this week. Not sure yet

Meeting with Michele Pioppi
    Isolation note,
    Analysis note

Discussions with Marcello

Now I'm understanding the basic PAT objects (Muons, electrons, jets, etc...)

Changing a little bit topic, Silvia propose to write an internal notes
    about Noise
    about the tools done

PAT old Fashion

PF2PAT

Runs over Reco Candidates
Those candidates are created from normal reconstruction algorithms.
Uses PAT over reco::particle
PAT is a Collection of algorithms used to:
 Clean,
 Disambiguate,
 Provide,
  objects ready to make analysis:

  Muons
  Electrons
  Photons
  Jets
  MET

Official tool to do analysis within CMS

Runs over Particle Flow Candidates
Uses recoPF::Candidate
It's an entire analysis framework
Uses PAT over PFcandidates
It constructs the particle using the energy flow of the object in the detector.
It requires a compact closed detector to balance the entire energy.
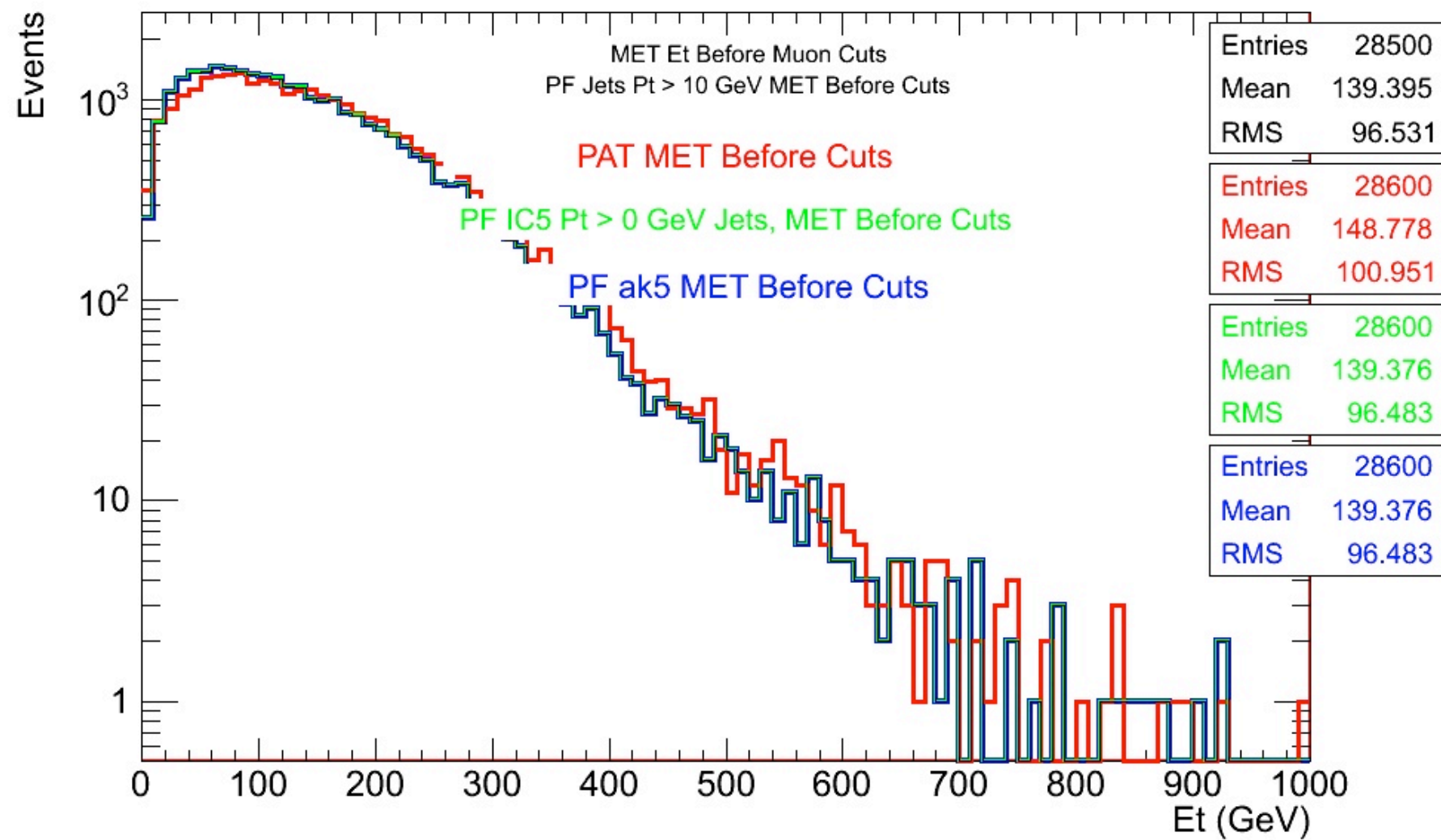
Data Used

I run over
    PF2PAT default
    PAT default
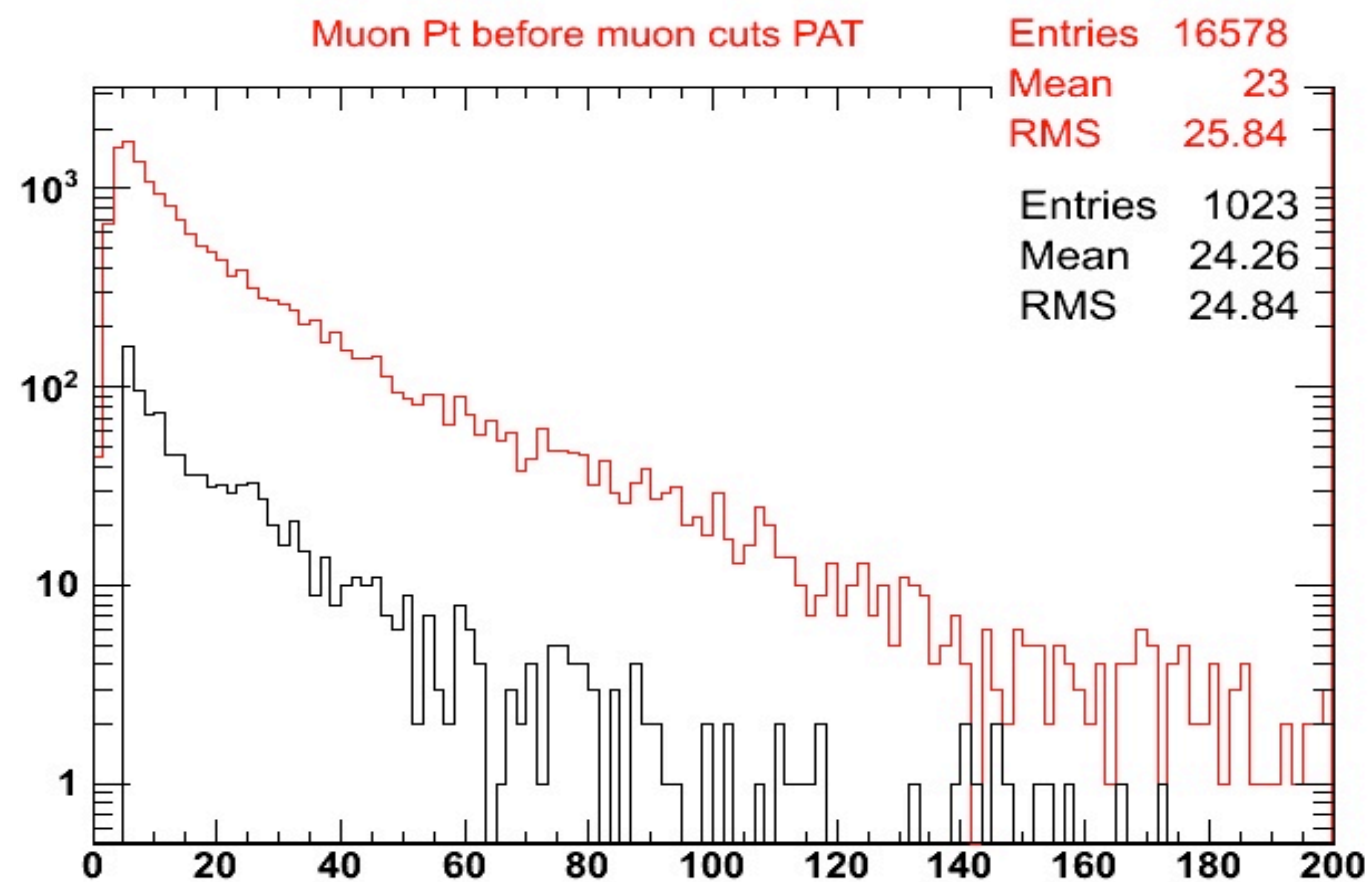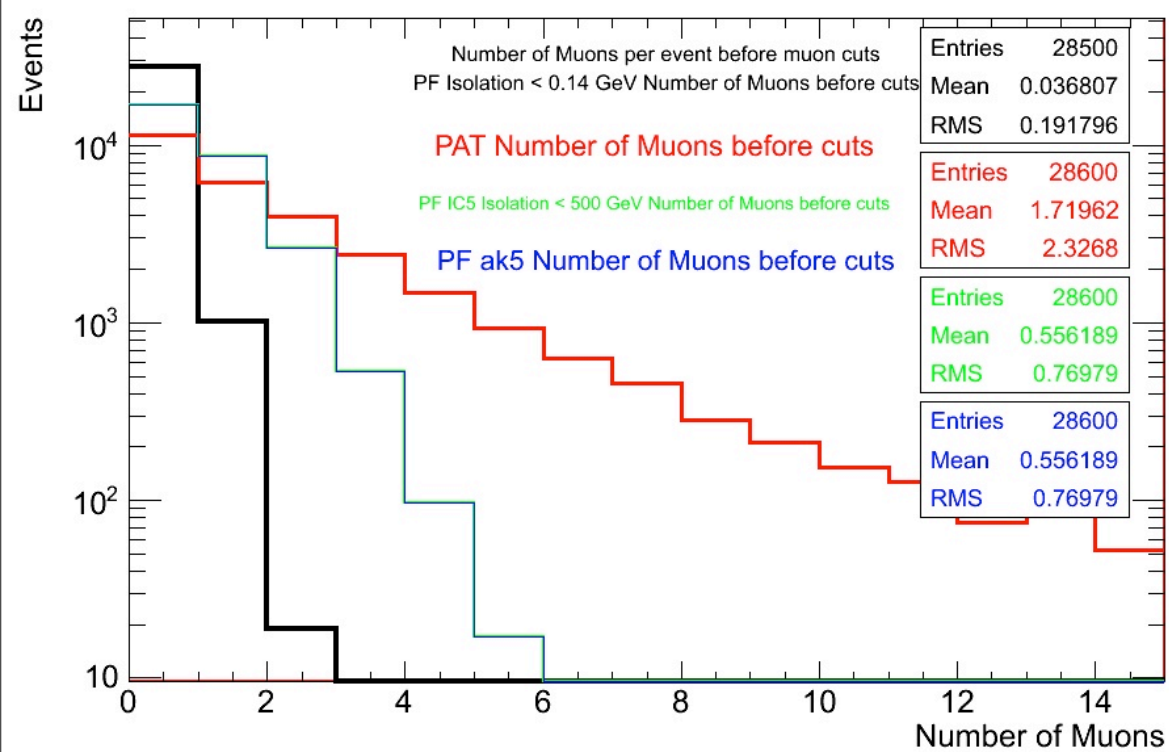   PF2PAT with correction over jets IC5 algorithm
    PF2PAT with correction over jets ak5 algorithm

MET

Muon

Number of Muons per event before muon cuts
PF Isolation < 0.14 GeV Number of Muons before cuts

Entries	28500
Mean	0.036807
RMS	0.191796

PAT Number of Muons before cuts

PF IC5 Isolation < 500 GeV Number of Muons before cuts

PF ak5 Number of Muons before cuts

Entries	28600
Mean	1.71962
RMS	2.3268

Entries	28600
Mean	0.556189
RMS	0.76979

Entries	28600
Mean	0.556189
RMS	0.76979

Muon Pt before muon cuts PAT

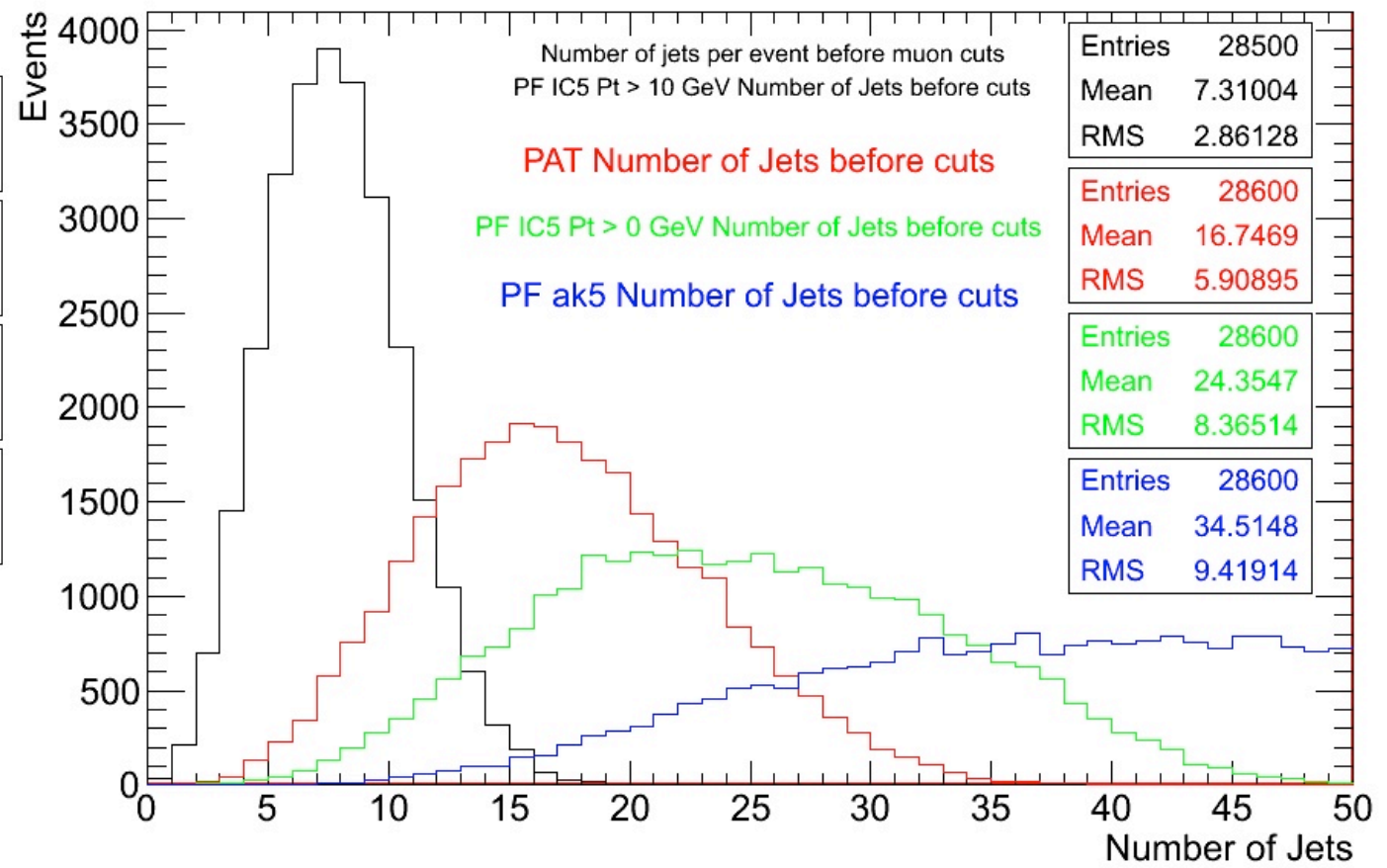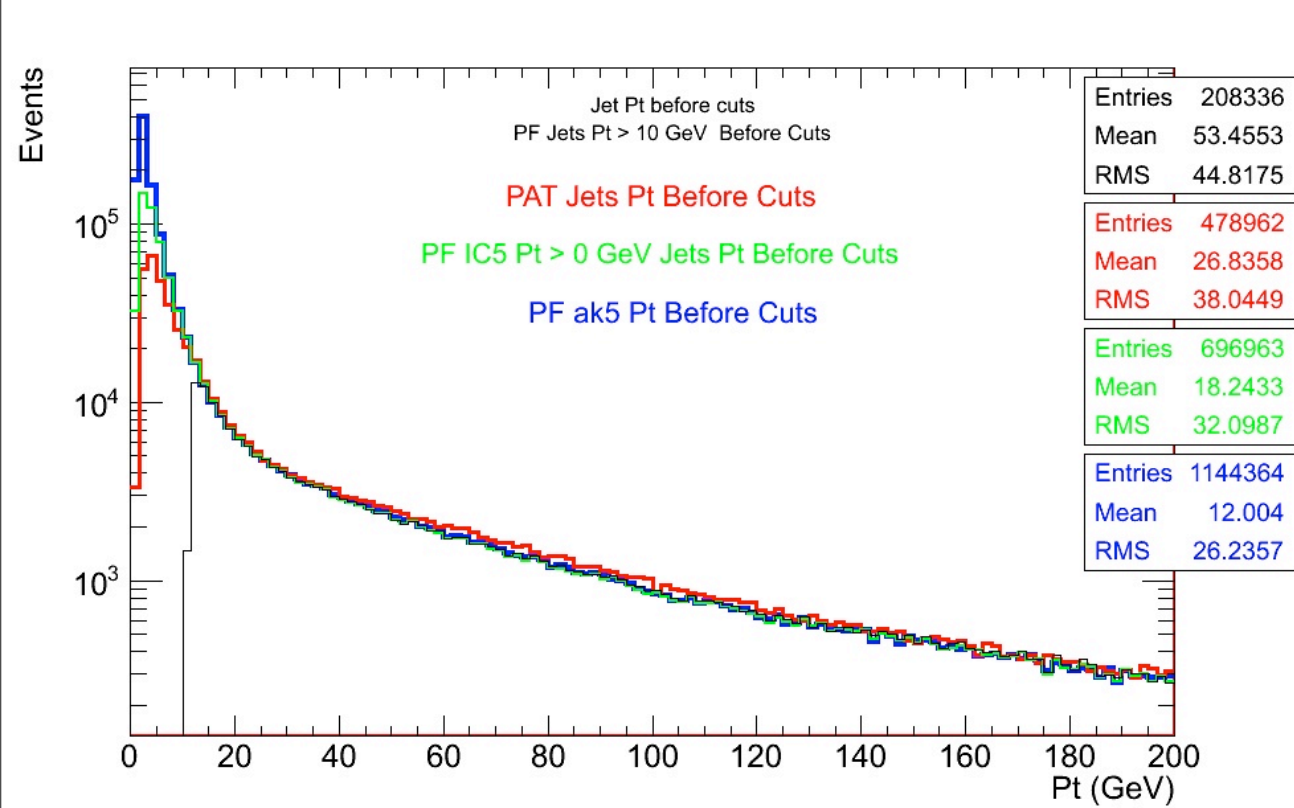| Entries	16578
Mean	23
RMS	25.84

Entries	1023
Mean	24.26
RMS	24.84

Jets

Jets Eta

Pt of First Jet, Second Jet and Third Jet